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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,711	03/20/2001	Debajit Ghosh	3932P023	3307

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EXAMINER	
OPSASNICK, MICHAEL N	

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/813,711	GHOSH ET AL.	
	Examiner	Art Unit	
	Michael N. Opsasnick	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4,6,9-16,18-23,25,28-34,36-41, and 43 rejected under 35 U.S.C. 103(a) as being unpatentable over Kanevsky et al (6529871) in view of Gould et al (6839669).

Regarding claims 1&13, Kanevsky et al. disclose a method and system that is comprised of a speech-processing system/ apparatus/device/software (collection of methods) that resides in the memory of a computer system (Col 5, Line 50 - Col 6, Line 7). Kanevsky et al. also discloses the building of user databases [claimed PIM database] and models by using an enrollment process that collects personal information (e.g. name, address, etc) from the user (Col 8, 30 51). The system contains non-acoustic and acoustic models (language models) for many users (Col 7, Line 62 and Col 8, Line 64). Kanevsky et al. disclose a learning algorithm for building user model that include the response to queried information from operators, informational forms, email forms, web based forms or Integrated Voice Response (IVR) systems (Col 7, Line 64 - Col 8, Line 7). This data is stored together with the acoustic models (language

models) collected by a speech recognition system (Col 8,Line 65). When the user calls the central server to gain access, the users acoustic features extracted by an automatic speech recognition (ASR) application and the non-acoustic data (personal information data) in the database is used to help in the determination of the identity of the speaker (Col 6, Lines 12 -56). However, Kanevsky et al (6529871) does not explicitly teach using the language models for use in an automatic speech recognizer based on the PIM data, however, Gould et al (6839669) teaches the use of language models in PIM data (col. 1 line 59 – col. 2 line 26), wherein the spoken utterances by the user are speech recognized (col. 3 lines 10-24), wherein a speaker profile is developed (col. 9 lines 1-21), and the language models associated with the user (col. 66 lines 30-50; col. 77 lines 9-30)(also note → and col. 66 – 77 contains more details with respect to the speech recognition process). Therefore, it would have been obvious to one of ordinary skill in the art of speech processing to modify the teachings of Kanevesky to include PIM data feedback of a user's speech recognition features because it would advantageously improve the speech recognition process (Gould, col. 1 lines 43-56).

Regarding claim 19, Kanevsky et al. disclose a speech-based processing system comprising of a database of PIM data associated with a user (Col 6, Line 36 - 40); a set of language models (Col 7, Line 60); a language model server including a learning unit [learning algorithm] (Col 8, Line 33-52), a lookup unit (Col 7, Lines 15-40); a recognition server to recognizer utterance of the user (Col 8, Line 13) and a speech application to trigger operation of the look-up unit to identify and access a subset of the PIM data specified by the utterance using the result of recognizing the utterance(Col 7, Lines 30 - 40). However, Kanevsky et al (6529871) does not explicitly teach using the language models for use in an automatic speech

recognizer based on the PIM data, however, Gould et al (6839669) teaches the use of language models in PIM data (col. 1 line 59 – col. 2 line 26), wherein the spoken utterances by the user are speech recognized (col. 3 lines 10-24), wherein a speaker profile is developed (col. 9 lines 1-21), and the language models associated with the user (col. 66 lines 30-50; col. 77 lines 9-30)(also note → and col. 66 – 77 contains more details with respect to the speech recognition process). Therefore, it would have been obvious to one of ordinary skill in the art of speech processing to modify the teachings of Kanevesky to include PIM data feedback of a user's speech recognition features because it would advantageously improve the speech recognition process (Gould, col. 1 lines 43-56).

Regarding claim 28, Kanevsky et al. disclose a speech-based processing system comprising of a processor means for executing software (Col 5, Line 64 - Col 6, Line 2); and a storage means having stored therein a learning unit to learn a set of language models based on a set of PIM data and a speech application to access a subset of the PIM data specified by a short reference to set to subset uttered by a user(Col 7, Lines 30 - 40). However, Kanevsky et al (6529871) does not explicitly teach using the language models for use in an automatic speech recognizer based on the PIM data, however, Gould et al (6839669) teaches the use of language models in PIM data (col. 1 line 59 – col. 2 line 26), wherein the spoken utterances by the user are speech recognized (col. 3 lines 10-24), wherein a speaker profile is developed (col. 9 lines 1-21), and the language models associated with the user (col. 66 lines 30-50; col. 77 lines 9-30)(also note → and col. 66 – 77 contains more details with respect to the speech recognition process). Therefore, it would have been obvious to one of ordinary skill in the art of speech processing to

modify the teachings of Kanevesky to include PIM data feedback of a user's speech recognition features because it would advantageously improve the speech recognition process (Gould, col. 1 lines 43-56).

Regarding claims 30 & 37, Kanevsky et al. disclose a method of facilitating speech recognition comprising of using an automated language model learning process to acquire a set of language models based on PIM data associated with a user (Col 8, Lines 35 - 51); recognizing an utterance by the user by using one of the language model(Col 8, Lines 52 -66); and using the recognized utterance of the user to identify and access a subset of the PIM data(Col 9, Line 2). However, Kanevsky et al (6529871) does not explicitly teach using the language models for use in an automatic speech recognizer based on the PIM data, however, Gould et al (6839669) teaches the use of language models in PIM data (col. 1 line 59 – col. 2 line 26), wherein the spoken utterances by the user are speech recognized (col. 3 lines 10-24), wherein a speaker profile is developed (col. 9 lines 1-21), and the language models associated with the user (col. 66 lines 30-50; col. 77 lines 9-30)(also note → and col. 66 – 77 contains more details with respect to the speech recognition process). Therefore, it would have been obvious to one of ordinary skill in the art of speech processing to modify the teachings of Kanevesky to include PIM data feedback of a user's speech recognition features because it would advantageously improve the speech recognition process (Gould, col. 1 lines 43-56).

Regarding claims 2,20,31 & 38, Kanevsky et al. disclose the method of asking the user random questions [claimed short references] derived from the personal database. The data will include portions or a subset of the data of the personal information data residing in the PIM/user database (Col 6, Lines 41-45).

Regarding claims 3,15,22,33 & 40, Kanevsky et al. disclose that a new user may periodically call the central server where the learning algorithm may be activated. The system collects voice samples from the caller's answers to the plurality of questions and builds a user voice model which will be provided to the system the next time the speaker calls and needs to be identified (Col 8, Line 64 - Col 9, Line 5).

Regarding claims 4,16,23,34 & 41 Kanevsky et al. disclose that a user may call the central server where the learning algorithm may be activated in real-time to help in the determination of the identity of the user by the use of stored language models based on the learning algorithm (Col 7, Lines 28 -33).

Regarding claims 6,18,25,36 & 43 Kanevsky et al. disclose that the language model learning algorithm is based on a statistical language model. Kanevsky describes that a user model provided by the learning unit is used to determine the probability of a particular user's identity (Col 11, Lines 3 - 35).

Regarding claims 9, 10, 11,12,14,29,21,32 & 39, Kanevsky et al. disclose that the learning algorithm takes data form a plurality of sources, each module containing a set of heuristics tailored for acquiring language models for one of a plurality of types of PIM data. The data comprises of personal address book, personal calendar and email message data. Kanevsky et al. describes categories of personal information data. The categories include static features which includes phone number, time of day, etc (personal address book data), dynamic features which include trips, meetings (personal calendar data) and email, faxes, etc. The data also includes internal information extracted from dialog that includes gender, speech rate, accent etc. and external information such as name, address, DOB, etc (Fig 4, Col 10, Lines 42 - 59).

3. Claims 5,17,24,35 & 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kanevsky et al. (U.S. Patent 6529871) in view of Gould et al (6839669) in further view of Kremer (IEEE 0-7803-4122-8/97).

Regarding claims 5,17,24,35 & 42, the combination of Kanevsky et al. (U.S. Patent 6529871) in view of Gould et al (6839669) discloses a method and system that is comprised of a speech-processing system/ apparatus/device/software (collection of methods) that resides in the memory of a computer system (Col 5, Line 50 - Col 6, Line 7). The system uses personal data to choose language models base on input speech. The combination of Kanevsky et al. (U.S. Patent 6529871) in view of Gould et al (6839669) does not disclose the use of a language model algorithm that utilizes grammar induction. However, Kremer teaches a grammar induction

technique that avoids the limitations of classical grammar induction algorithms (Page 1424, Paragraph 1 & 2). Grammar induction is a necessary process by which the language models based on a finite set of example strings from the PIM data will be used to identify grammar, for a potentially infinite set of strings or language. Therefore, it would have been obvious to those skilled in the art at the time of the invention to modify the combination of Kanevsky et al. (U.S. Patent 6529871) in view of Gould et al (6839669) with the use of language models that utilize grammar induction as taught by Kremer since it is essential for language models utilized in automatic speech recognition systems. (Kremer, page 1424, first paragraph).

4. Claims 7,8,26,27,44 & 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanevsky et al. (U.S. Patent 6529871) in view of Gould et al (6839669) in further view of Fitzpatrick et al. (U.S. Patent Application 20020184033).

Regarding claims 7,26 & 44, Kanevsky et al. (U.S. Patent 6529871) in view of Gould et al (6839669) discloses a method and system that is comprised of a speech-processing system/apparatus/device/software (collection of methods) that resides in the memory of a computer system (Col 5, Line 50 - Col 6, Line 7). The system uses personal data to choose language models base on input speech: Kanevsky do not disclose the use of an API designed to access PIM data. However, Fitzpatrick et al. teach the use of Standard Application Program Interface (API) for integrating other Text-to-Speech Servers (Page 4, Paragraph 0116). APIs are important and necessary for developers to efficiently integrate large-scale software applications and modules. Therefore, it would have been obvious to those skilled in the art at the time of the invention to modify the combination of Kanevsky et al. (U.S. Patent 6529871) in view of Gould

et al (6839669) with the use of APIs as taught by Fitzpatrick et al. since it would have made the integration of the learning modules with other applications more efficient. (Fitzpatrick, page 4, paragraph 0116).

Regarding claims 8,27 & 45, Kanevsky et al. (U.S. Patent 6529871) in view of Gould et al (6839669) does not disclose the use of providing the PIM data in XML format. However, Fitzpatrick et al. teach the use of providing documents in XML format (Page 6, Paragraph 0175). XML is a general and highly flexible representation of any type of data. XML uniform tags make it easy to map one XML structure to another or to map XML into other data formats. Therefore, it would have been obvious to those skilled in the art at the time of the invention to modify the combination of Kanevsky et al. (U.S. Patent 6529871) in view of Gould et al (6839669) with the use of XML as taught by Fitzpatrick et al. since it would have made the data more uniform so that it can be transferred and mapped to other types of data.

Response to Arguments

5. Applicant's arguments filed 7/20/2005 have been fully considered but they are not persuasive. As per applicant's arguments on page 3 of the response alleging that neither Kanevsky nor Gould discloses or suggest automatically learning a set of language models, examiner argues that this feature is not claimed in claim 30 (claim 30 is offered by applicant's representative as the representative claim of all the pending independent claims). The claim scope of claim 30 pertains to using a process to acquire a set of language models → there is not claimed step of "learning", or and action verb performing the act of "learning". Applicant again

refers to this feature in the bottom half of page 3 of the response ("1. No disclosure or suggestion of automatically learning a set of language models"). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Continuing to applicant's arguments starting on the bottom of page 3 of the response to the bottom of page 4 of the response (namely, the arguments against Kanevesky), applicant now argues that Kanevesky does not teach language models (with applicant defining a language model as a dataset that is used by an automatic speech recognizer to recognized speech). Applicant then states that "Kanevesky does not even hint that the ability to automatically build anything that could be construed as a language model within the meaning of the present application" (top of page 4 of the response). Examiner disagrees and argues that Kanevsky's system does indeed recognize speech (in addition to the cited passages of Kanevesky presented above, see col. 8 lines 60 – col. 9 line 5 → when the user answers the posed question, word recognition is being performed; Kanevesky is not *solely* performing utterance detection, but *both* utterance and word recognition (see also col. 13 line 63 – col. 14 line 24; in addition, the discussion of using a Natural Language System, and word spotting).

On pages 5-6 of the response, applicant makes an argument that neither prior art reference teaches "to identify and access a subset of the PIM data"; examiner notes that applicant hinges the argument on the incorrect allegation that Kanevesky does not teach the recognition of speech (see arguments in previous paragraph regarding the issues of recognized speech in Kanevsky). The first two full paragraphs on page 6 of the response amount to a general allegation that the claims define a patentable invention without specifically pointing out how the

language of the claims patentably distinguishes them from the references (in this particular case, no discussion of the particulars of the Gould reference).

On the bottom of page 6 to page 8 of the response, applicant's present a lengthy discussion of hindsight reasoning which uses a general allegation that there is no suggestion or motivation in either Kanevsky or Gould as to why it would be desirable to provide a system per the present invention. Examiner disagrees and argues that 1) the purpose of the Gould reference is to teach the use PIM data as noted above in the rejection, 2) multiple reasons for motivation to combine the references is taught in Gould → in fact, the provided passages of the Gould reference, (to address the claim limitations), itself contains motivation to use PIM information in the language models {(the already referenced col. 1 line 59 – col. 2 line 26 → the system makes if easier to access personal information while mobile); (the already referenced col. 3 lines 10-24, allowing the user to review the recognition to make sure it is correct before using the information), (the already referenced col. 9 lines 1-21, showing the use of PIM to choose a profile, and allowing the user to choose a profile when multiple profiles are available, to insure a properly chosen profile), and the already referenced col. 1 lines 43-56, allowing the user to correct errors in the recognition.}. The already presented multiple reasons to use the Gould reference clearly overcomes any allegation of hindsight reasoning, including an allegation of using "bare bone, conclusive, overly general statements".

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872 9314,

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (571)272-7623, who is available Tuesday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Wayne Young, can be reached at (571)272-7582. The facsimile phone number for this group is (571)~~272-7629~~. 273-8300

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571)272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mno
9/5/05

W. R. YOUNG
PRIMARY EXAMINER